

Radio Test Report

Report No.: STS2405058H01

Issued for

Nanjing Greenwise New Energy Technology Co., Ltd.

Glorius Youth Workshop, 89 Pingliang Street, Jianye District,
Nanjing, Jiangsu, China

Product Name: AC Charger

Brand Name: iCubic

Model Name: LHRS-AC50-M3T1

Series Model(s): LHRS-AC40-M3T1, LHCT-AC40-M3T1,
LHCT-AC50-M3T1

FCC ID: 2BFDILHRSAC50M3T1

Test Standards: FCC 47CFR §2.1091

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

**TEST REPORT**

Applicant's Name: Nanjing Greenwise New Energy Technology Co., Ltd.
Address: Glorius Youth Workshop, 89 Pingliang Street, Jianye District,
Nanjing, Jiangsu, China
Manufacturer's Name: Nanjing Dianrui New Energy Technology Co., Ltd.
Address: No.1 Shengyun Road, Jiangning District, Nanjing City, Jiangsu
Province, China

Product Description

Product Name: AC Charger
Brand: iCubic
Model Number: LHRS-AC50-M3T1
Series Model(s): LHRS-AC40-M3T1, LHCT-AC40-M3T1, LHCT-AC50-M3T1
Standards: FCC 47CFR §2.1091
447498 D01 Interim General RF Exposure Guidance v06

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Date of Test

Date of receipt of test item: 17 May 2024
Date (s) of performance of tests: 17 May 2024 ~ 22 May 2024
Date of Issue: 31 May 2024
Test Result: **Pass**

Testing Engineer :

(Aaron Bu)

Technical Manager :

(Chris Chen)

Authorized Signatory :

(Bovey Yang)





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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	31 May 2024	STS2405058H01	ALL	Initial Issue



1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	AC Charger	
Brand	iCubic	
Model Number	LHRS-AC50-M3T1	
Series Model(s)	LHRS-AC40-M3T1, LHCT-AC40-M3T1, LHCT-AC50-M3T1	
Model Difference	The electrical circuit design, layout, components used and internal wiring for above models are identical, only different in model name, color, and the shape of the top cover panel.	
Product Description	The EUT is AC Charger	
	Operation Frequency:	BT:2402-2480MHz 802.11b/g/n20:2412-2462MHz NFC:13.56MHz
	Modulation Type:	NFC:ASK BT: GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps), 2.4G WIFI: 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM
	Antenna gain:	BT:2dBi 2.4G WIFI: 2dBi NFC: 0dBi
	Antenna Designation:	BT:PCB Antenna 2.4G WIFI:PCB Antenna NFC: coil Antenna
Rating:	Input: 9.6kW /11.5kW Output: 9.6kW /11.5kW	
Hardware Version	N/A	
Software Version	N/A	

1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)
Limits for Occupational / controlled Exposures			
3.0-30	1842/f	4.89/f	*(900/f ²)
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
1.34-30	824/f	2.19/f	*(180f ²)
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.



2.3 TEST RESULT

Turn up

Mode	Detector	Turn up Power
NFC	PK	62.57(dBuv/m)
2.4G WIFI	PK	23±1dBm
BT	PK	7±1dBm

RF Function	Frequency (MHz)	Separation distance (cm)	Max.powerE(dBuv/m)	ANT Gain (dBi)	Electric field strength (V/m)	Electric field strength Limits (V/m)	Ratio	Result
NFC	13.56	20	-32.63	0	0.00134	60.77	0.0000221	Pass

Protocol	Fre. (MHz)	Separation distance (cm)	Max Turn up power (dBm)	ANT Gain (dBi)	Max EIRP (dBm)	Max EIRP (mW)	Power Density (mW/cm²)	Limit (mW/cm²)	Ratio	Result
BT	2440	20	8	2	10	10	0.0020	1	0.0019894	Pass
2.4G WIFI	2462	20	24	2	26	398.1	0.0792	1	0.0792	Pass

Multiple transmission:

$$BT+2.4G\ WIFI+NFC=0.0019894+0.0792+0.0000221=0.0812122<1$$

Note: 1. The Maximum power is less than the limit, complies with the exemption requirements.

2. ERP=EIRP-2.15

*****END OF THE REPORT*****